

## **AMENDMENTS TO THE CLAIMS**

1. (Currently amended) A server system for improving predictive failure attributes of distributed devices, comprising:

a receiver for receiving, via a network, failure analysis data from individual ones of a plurality of distributed devices; where

each device of said a plurality of distributed devices each of said plurality of devices comprises a including failure sensing function means arranged for collecting failure analysis data of said distributed device and a communications device communication means coupled to said failure sensing function means and arranged for transmitting said failure analysis data to;

a said network coupled to said communication means of each of said plurality of devices; and,

a server coupled to receive said failure analysis data of each of said plurality of devices via said network;

wherein said server is arranged for analyzing said failure analysis data received from each of said plurality of devices and for providing failure information.

2. (Currently amended) The server system of claim 1, wherein said device each of said plurality of devices comprises includes an algorithm for managing the an operation of a the failure tolerant component and wherein said failure information comprises includes an updated algorithm for providing improved operation of said failure tolerant component.

3. (Currently amended) The server system of claim 2, wherein said updated algorithm is transmitted to said each device via said network.

4. (Currently amended) The server system of claim 1, wherein said failure information is used to improve at least one of design and manufacturing steps for future distributed devices.

5. (Currently amended) The server system of claim 1, wherein said failure information provides an indication of operating lifespan of said plurality of distributed devices.

6. (Currently amended) The server system of claim 3 wherein said device each of said plurality

of devices is coupled to said network via an intermediary software agent.

7. (Currently amended) The server system of claim 6 wherein said intermediary software agent is installed on a local server.

8. (Currently amended) The server system of claim 7, wherein said local server includes comprises a database arranged for storing said failure analysis data from said device, said local server being arranged for periodically uploading said failure analysis data to said manufacturer's server.

9. (Currently amended) A device comprising:

a failure sensing function means arranged for collecting failure analysis data of said device; and,

a communications device communication means coupled to said failure sensing function means and arranged for transmitting said failure analysis data to a remote server via a network,

wherein said server is arranged for analyzing analysing said failure analysis data received from said device and from other devices and for providing failure information.

10. (Currently Amended) The device of claim 9 wherein said device includes an algorithm for managing the operation of the a failure tolerant component of said device and wherein said failure information includes an updated algorithm for providing improved operation of said failure tolerant component.

11. (Original) The device of claim 10 wherein said updated algorithm is transmitted to said device via said network.

12 (Currently amended) The device of claim 9, wherein said failure information is used to improve at least one of design and manufacturing steps for future devices.

13. (Original) The device of claim 9 wherein said failure information provides an indication of operating lifespan of said device.

14. (Original) The device of claim 11 wherein said device is coupled to said network via an intermediary software agent.

15. (Original) The device of claim 14 wherein said intermediary software agent is installed on a local server.

16. (Currently Amended) The device of claim 15 wherein said local server includes a database arranged for storing said failure analysis data from said device, said local server being arranged for periodically uploading said failure analysis data to a said manufacturer's server.

17. (Currently amended) A method for performing predictive data analysis using a central server of a number of distributed devices, said method comprising ~~the steps of~~:

collecting failure analysis data from at least failure tolerant components of said a plurality number of distributed devices;

receiving transmitting said failure analysis data from to a central server via a network coupled to each device of said plurality of distributed devices;

processing said failure analysis data;

analyzing analysing said failure analysis data received from said each device of said plurality of devices; and

providing failure information therefrom.

18. (Currently amended) The method of claim 17, wherein said each device comprises includes an algorithm for managing the operation of the failure tolerant component and wherein said failure information comprises includes an updated algorithm for providing improved operation of said failure tolerant component.

19. (Original) The method of claim 18 wherein said updated algorithm is transmitted to said device via said network.

20. (Currently amended) The method of claim 17, wherein said failure information is used to improve at least one of design and manufacturing steps for future devices.

21. (Currently amended) The method of claim 17, wherein said failure information provides an indication of operating lifespan of said plurality of distributed devices.
22. (Currently amended) The method of claim 19 wherein said each device is coupled to said network via an intermediary software agent.
23. (Original) The method of claim 22 wherein said intermediary software agent is installed on a local server.
24. (Currently amended) The method of claim 23 wherein said local server includes a database arranged for storing said failure analysis data ~~from said device~~, said local server being arranged for periodically uploading said failure analysis data to a said manufacturer's server.

Please add the following claims:

25. (New) A server as in claim 1, wherein said communications device uses one of an Hypertext Transfer Protocol (HTTP), a Transmission Control Protocol / Internet Protocol (TCP/IP) and a Small Computer Systems Interface (SCSI).
26. (New) A server as in claim 1, wherein said network comprises a firewall, and where said failure analysis data is transmitted using a transmission protocol selected for being able to pass through said firewall.
27. (New) A server as in claim 6, wherein said agent uses an interrogator.
28. (New) A server as in claim 6, wherein said agent uses a communications path other than that used for normal input and output (I/O) operations.
29. (New) A computer program comprising computer readable program code stored on a computer readable medium for performing failure analysis of a plurality of disk drives that comprise a part of at least one data storage system, comprising first program code for collecting failure analysis data from individual ones of said disk drives and for

transmitting said collected failure analysis data to a central server via a data communications network.

30. (New) A computer program as in claim 29, further comprising second program code, executed at said central server, for analyzing said failure analysis data received from said data communications network and deriving failure information therefrom.
31. (New) A computer program as in claim 30, where said failure information comprises revised disk drive operating program code that is downloaded to said plurality of disk drives via said data communications network.
32. (New) A computer program as in claim 29, where said first program code is executed by a local server that comprises a part of said data storage system, and where said collected failure analysis data is locally stored in said data storage system prior to being transmitted to said central server.
33. (New) A computer program as in claim 29, where said first program code is executed by a local server that comprises a part of said data storage system, and where said collected failure analysis data is transmitted to said central server as it is collected.
34. (New) A computer program comprising computer readable program code stored on a computer readable medium for performing failure analysis of a plurality of disk drives that comprise a part of at least one data storage system, comprising first program code, executed by a server, for receiving, via a data communications network, failure analysis data from said at least one data storage system for analyzing said failure analysis data and for deriving failure information therefrom.
35. (New) A computer program as in claim 34, further comprising second program code, executed by a component of said at least one data storage system, for collecting and transmitting said failure analysis data to said central server via said data communications network.
36. (New) A computer program as in claim 34, where said failure information comprises revised

disk drive operating program code that is downloaded to said plurality of disk drives via said data communications network.

37. (New) A computer program as in claim 35, where said second program code is executed by a local server that comprises a part of said data storage system, and where said collected failure analysis data is locally stored in said data storage system prior to being transmitted to said central server.

38. (New) A computer program as in claim 35, where said second program code is executed by a local server that comprises a part of said data storage system, and where said collected failure analysis data is transmitted to said central server as it is collected.

39. (New) A system for collecting and processing failure information generated by a plurality of distributed data storage systems each comprising a plurality of data storage units, comprising a local server in individual ones of said data storage systems for receiving failure reports from individual ones of said data storage units, each said local server being coupled to the Internet and transmitting failure report data thereto; and, also coupled to the Internet, a central server for receiving the failure report data and operating to process said received failure report data from said plurality of distributed data storage systems to derive failure data therefrom.

40. (New) A system as in claim 39, where said failure data comprises revised data storage unit operating program code, where said central server downloads said revised data storage unit operating program code to at least some of said data storage systems for use by at least some of said data storage units.